



Virginia's Enhanced Operator Qualification Program

Shane Ayers
Safety Program Manager
Division of Utility and Railroad Safety

Background

- **Original mandate in 1992**
- **Rule became effective in 1999**
 - **Negotiated Rulemaking**
- **Operators had until mid 2001 to develop a written OQ Plan.**
- **Operators were required to complete the qualification process for all employees performing covered tasks before the end of 2002.**

PHMSA's Statement of Intent for OQ

“The intent of the OQ Rule is two-fold:

- 1) To ensure a qualified workforce ...
- 2) Reduce the probability and consequence of pipeline incidents....caused by human error.”

PHMSA's Statement of Intent for OQ

“...OQ is not intended to be a one-time event, but a process that continues for the working lifetime of an individual.”

Development of OQ Plans

- Once PHMSA issued the final rule, the SCC Staff began working with the VGOA to develop the framework of a “Model” OQ plan.
- This framework was used by the companies to write their OQ Plans.
- Staff began its inspections shortly thereafter.

Issues were Repeated

- Our inspections continued to reveal many OQ related issues
- These repeated issues demonstrated that the operator qualification process needed improvement.

Plastic Pipe Fusion Issues



Cold Fusion on a 6-inch Gas Main



Inadequate Stab Depth



Failure to Follow Electro-fusion Procedures



Electrofusion Tapping Tee Improperly Installed



Plastic Pipe Fusion Requirements

- These issues were discovered despite the fact that employees were “Qualified”
- Further, 192 requires
 - Annual evaluation for plastic pipe fusion
 - Destructive testing of fusions made

Squeeze-Off Issues

- Squeeze off tools must be placed 3 pipe diameters or 12 inches away from a fitting or fusion, whichever distance is greater.
- Employees were not following the proper procedure despite having been qualified through the companies' OQ processes.



Squeeze Off Issues



Squeeze Off Issues



Welding Requirements

- These issues were discovered despite the requirement that individuals performing welding must be “qualified”
- In addition, the pipeline safety regulations also require that anyone performing welding has to be evaluated every year, and make welds using the procedure that are evaluated through destructive testing

Welding Issues



No Alignment Clamp



Field Applied Epoxy Coating

Manufacturer's statement about examining the coating when application is complete:

“The finished coating shall be generally smooth and free of protuberances or holidays. All surfaces shall have the required minimum [thickness]. In general, the surface of the coating shall be no rougher than the base or substrate material. No drips, running, sagging or other discontinuities are acceptable.”

Coating Issues



Coating Issues



Coating Issues



Coating Issues



Root Cause

- Staff began a comprehensive investigation of OQ programs during 2010, continuing into 2011, in an effort to identify the root cause(s) of the repetitive issues.

Root Cause

- Our findings included:
 - Some plans contained outdated information
 - Some referenced equipment not even in use by the operator.
 - Many contained over-simplified testing materials

Testing Issues

- In certain cases, individuals could be “requalified” to perform an OQ task in less than 15 minutes.
- Some companies allowed individuals failing a test to retake them immediately until they passed.
- Tests were also simple or copied directly from the training material.

OQ Test Examples

- When preparing a conductive coupling _____ must be removed.
 - A. Batteries
 - B. **Rust**
 - C. Receivers
 - D. Transmitters
- A rather expensive method of locating underground pipelines that involves both special equipment and man-hours is to use _____.
 - A. Probing rods
 - B. Maps
 - C. Employee experience
 - D. **Excavation equipment**

OQ Test Examples

- From the Study Guide:

1. When performing plastic heat fusion, the following would be considered abnormal operating conditions:

- Equipment out of recommended tolerances.
- Dirty or contaminated pipe or oxidation not removed.
- Pipe ends not square.

- From the Test:

1. When performing plastic heat fusion, all of the following would be considered abnormal operating conditions **except**:

- a. Equipment out of recommended tolerances.
- b. Dirty or contaminated pipe or oxidation not removed.
- c. Pipe ends not square.
- d. **Equipment and fitting compatible but from different manufacturers.**

Focus

- Companies have performance measures for
 - Lost time hours
 - On the job injuries
 - OSHA matters
- Companies have policies about vehicle accidents

Focus

- It was hard to understand why companies were not placing a similar emphasis on developing performance measures for pipeline safety issues as with personal safety.

Meanwhile...

- In some cases, the Commission required various gas companies to revise their OQ plans and procedures and retrain their employees as part of enforcement actions
- OQ issues were discussed individually with the operators and at several Pipeline Safety Conferences

Failure to Inspect Construct Activities



Cold Fusion



Improper Anode Installation



Separation



Structures over Service Lines



Exposed Plastic Pipe



Meter Support / Venting



Meter Support



Service line installed through laundry room- Regulator near vent



Atmospheric Corrosion on Service Riser



Stressed Piping



Coating Issues



Corrosion Issues



Enough Talk!
Time for Action!

Virginia's Enhanced OQ Program

- Staff discussed these issues at the June, 2011 VGOA Executives meeting.
- The Commission Staff and the VGOA agreed to undertake a complete review and rewrite of OQ tasks that would apply to all companies in Virginia.
- Subsequently, a list of 55 “covered” tasks was prepared and prioritized.

Virginia's Enhanced OQ Program

- In order to facilitate the process, SME Teams are selected for each OQ task
 - The SME Team establishes the domains, elements, and testing materials necessary for evaluating knowledge, skill, and ability for each OQ task
 - Test questions are validated by a third party PHD specializing in education
 - Third party develops training materials based on SME input
 - SME's evaluate the training material and collectively approve final version
 - The Executive Committee has final approval and resolves any issues where SMEs cannot gain consensus
- 11 of the 55 tasks are currently in process with the remaining 44 to finish by the end of 2014.

Virginia's Enhanced OQ Program

- Currently, the only OQ task that has been completed is for the recognition of abnormal operating conditions (“AOC”) around meter sets.
- Based upon the testing results, approximately 60% of the people taking the test passed it the first time.
- A total of 84% of the employees have now passed the exam.

Has it been effective?

- Results – Based on information received from two LDC's:
 - A total of 23,918 meters have been inspected:
 - This represents less than 10% of the total number of meters in these two systems.
 - 7,404 issues have been found that are being scheduled for repair.
 - 105 structures over services have been found.

Path Forward

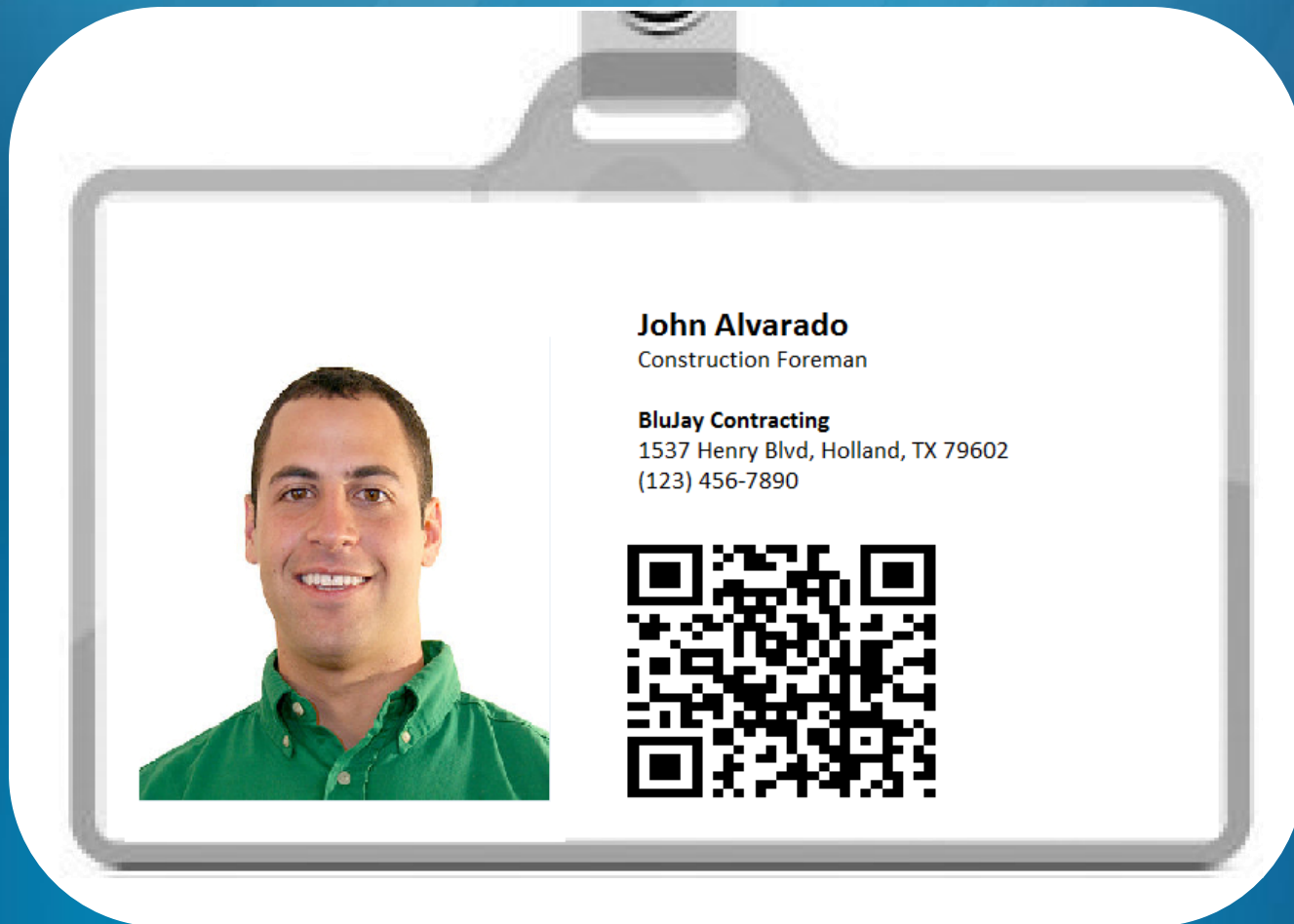
- Virginia's Enhanced OQ Program will:
 - Ensure a properly trained and qualified workforce
 - Facilitate mutual assistance
 - Reduce duplication of OQ for contractor employees
 - Enable sharing OQ records amongst LDC's (weed out bad performers)

Leveraging Technology

- As a result of data sharing, technologies already exist to take advantage of the information.
- For example, through the use of a quick response barcode (“QR”), a company or SCC inspector with a tablet or smartphone can immediately access the qualification record for an employee.

QR Code

- Here is an example:

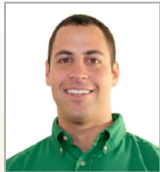


QR Code Results

http://ref.onboardlms.com/?yulk4p



OnBoard Learning Management System Digital Wallet Card



John Alvarado

Company:

BluJay Contacting

Job Title:

Construction Foreman

Supervisor:

Angelo Muñoz

Company Phone:

[270-293-8852](tel:270-293-8852)

Task type: K = Knowledge, S = Skill.

Time now: 9/27/2013 10:06:17 AM. [Refresh](#)

Type	Task	Date Performed	Expires	Is Qualified
K	CH-1 Exam Install Customer Gas Meter and Regulator Sets (ITSOQCH1.0)	08/25/12	11/07/15	Yes
S	Joining of Pipe - Threaded Joints (ITSOQ0721)	11/07/12	01/02/13	Yes
S	Joining of Pipe -- Flange Assembly (ITSOQ0731)	11/07/12	01/02/13	Yes
S	Installation of Customer Meters and Regulators - Residential and Small Commercial (ITSOQ1161)	11/07/12	01/02/13	Yes
S	Installing Customer Meters - Large Commercial and Industrial (ITSOQ1171)	11/07/12	01/02/13	Yes

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Training vs. Complacency

- Training can be fixed
- Testing can be fixed
- It takes more than that to perform safety functions within the pipeline industry

An example:

- A detailed procedure is developed to perform a task correctly.
- The successful execution of the procedure requires actions of an individual who:
 - Is Properly Qualified.
 - Understands the intent of the procedure.
 - Accepts the responsibility for doing the task correctly.
 - Understands and appreciates that it is wrong to take a potentially unsafe shortcut.

In Closing...

- Virginia is viewed by many as a model
 - Other states are already asking about our new OQ Process
 - Consent agreement in another state has required the adoption of the Virginia Enhanced OQ for Meter Set AOCs module
- We did not get here by resting on our laurels
 - There is a great deal of work still to be done

Questions?



PIPELINE SAFETY

make it personal!